

Civil Engineering Consulting & Surveying

5100 S. Lincoln • Suite 100 • Lisle, IL 60532 • (630) 271-0770 • (630) 271-0774 Fax

December 4, 2006

MEI Project No. 06-PR-5004

Client Name:

Gemini Office Development

Project Address:

240 North Oakhurst Drive

Aurora, Illinois

Engineer's Estimate of Cost for Soil Erosion Control & Protection

	·	<u>Unit</u>	Quantity	Unit Price	Extension
1	Furnishing & Placing Topsoil, 4"	SY	1,694	\$ 4.00 \$	6,776.00
2	Seeding	AC	0.35	\$ 3,000.00	1,050.00
3	Soil Erosion & Sedimentation Control	LS	3.1	\$ 750.00 ু	750.00
4	Rip Rap	CY	16	\$ 75.00 <u> </u>	1,200.00
	· ·			TOTAL \$	9,776.00



Civil Engineering Consulting & Surveying

5100 S. Lincoln • Suite 100 • Lisle, IL 60532 • (630) 271-0770 • (630) 271-0774 Fax

December 4, 2006

MEI Project No. 06-PR-5004

Client Name:

Gemini Office Development

Project Address:

240 North Oakhurst Drive

Aurora, Illinois

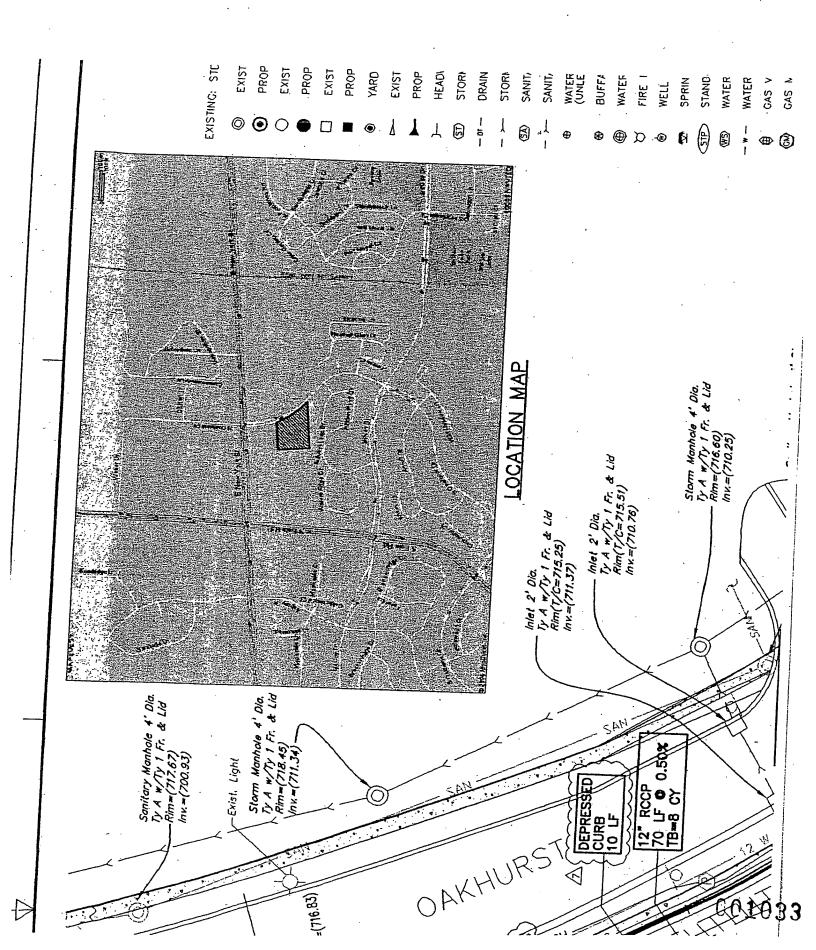
Engineer's Estimate of Cost for Public Improvements

		<u>Unit</u>	Quantity	Unit	Price	Exte	ension
			7.			ا الكانسية (15 مايلام)	
1	PCC Sidewalk Offsite	SY	165	\$ ^{``}	35.00	\$ 5,	775.00
2	Combination Concrete Curb & Gutter, B6-12	LF	292	\$	11.50	\$ 3,	358.00
3	6" PVC SDR 26, D-2241	LF.	, _{t,s,} 50	\$ _{	22.00	1,	100.00
4	Connect to Existing Sewer	EA	1	\$ 1	00.00		100.00
5	Trench Backfill	CY	28	\$	18.00		504.00
6	Fire Suppresion Service 4" DIP	EΑ	1	\$ 5	00.00		500.00
7	Water Service, 3" Type K Copper with B-Box	EΑ	1	\$ 1,2	00.00	1,	200.00
			·.				
8	Pressuretap Connection to Existing Watermain in 4' dia Vault	EA	1.1	\$3,0	00.00	3,	000.00
			THE PARTY OF		า เมาะสังก็ใ		i de la
				TOT/	AL	\$ 15,	537.00

062-044114
REGISTERED
PROFESSIONAL
ENGINEER
OF

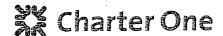
Sigitas P. Veznelis

9 -06 Date



GEMINI OFFICE BUILDING

TRIBUTARY AREAS EXHIBIT



International Division 20 Cabot Road Medford, MA 02155 USA 888 868-0212 tel SWIFT CTZIUS33 TELEX 211047 CTZINTL

OUR REFERENCE NUMBER S904105

IMMEDIATELY AND EXPIRING AT OUR OFFICE ON DECEMBER 22, 2007.

THIS IRREVOCABLE STANDBY LETTER OF CREDIT IS ISSUED FOR THE PURPOSE OF SECURING AND PAYING FOR THE INSTALLATION OF THE PUBLIC IMPROVEMENTS AND STORMWATER MANAGEMENT FACILITIES IN THE CEMINI OFFICE DEVELOPMENT LLC SUBDIVISION, ONE SOUTH WACKER 240 N. Oakhurst Drive Autor DRIVE CONSTRUCTED BY MORRIS ENGINEERING, IN ACCORDANCE - Gemini office Development 1: WITH PLANS AND SPECIFICATIONS APPROVED BY THE CITY OF AURORA ENGINEER AS PREPARED BY MORRIS ENGINEERING, INC.

IN NO EVENT SHALL THIS IRREVOCABLE STANDBY LETTER OF CREDIT OR THE OBLIGATIONS CONTAINED HEREIN EXPIRE EXCEPT UPON SAID PRIOR WRITTEN NOTICE TO THE CITY CLERK OF THE CITY OF AURORA, 44 EAST DOWNER PLACE, AURORA, ILLINOIS 60507 BY CERTIFIED OR REGISTERED MAIL, RETURN RECEIPT REQUESTED, AT LEAST NINETY (90) DAYS PRIOR TO SAID EXPIRATION DATE, THAT SAID LETTER OF CREDIT IS ABOUT TO EXPIRE AND THAT THE SAID EXPIRATION DATE SHALL BE EXTENDED AS REQUIRED TO COMPLY WITH THIS NOTICE PROVISION.

ON APPROVAL OF THE CITY ENGINEER THIS IRREVOCABLE STANDBY LETTER OF CREDIT MAY BE RENEWED OR EXTENDED PRIOR TO THE SAID EXPIRATION DATE BY SUBMITTING A NEW LETTER OF CREDIT IN THE SAME FORM AS THIS LETTER OF CREDIT TO THE CITY ENGINEERING DEPARTMENT IN AN AMOUNT AS DETERMINED BY THE CITY ENGINEER TO COMPLETE AND PAY FOR THE ABOVE DESCRIBED PUBLIC IMPROVEMENTS AND STORM WATER MANAGEMENT FACILITIES.

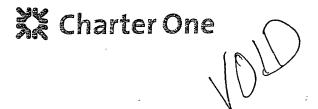
WE HEREBY ENGAGE WITH YOU THAT ALL DEMANDS FOR PAYMENT MADE IN CONFORMITY WITH THE TERMS OF THIS IRREVOCABLE STANDBY LETTER OF CREDIT WILL BY DULY HONORED ON PRESENTATION TO US PRIOR TO EXPIRATION OF THIS LETTER OF CREDIT, A LETTER FROM CITY ENGINEER OF THE CITY OF AURORA DEMANDING PAYMENT ON OR BEFORE SAID EXPIRATION DATE CERTIFYING THAT:

1. SAID LETTER OF CREDIT WILL EXPIRE WITHIN THIRTY (30) DAYS AND HAS NOT BEEN RENEWED OR EXTENDING AND A REPLACEMENT LOC HAS NOT BEEN ISSUED;

OR

2. THAT THE AFORESAID IMPROVEMENTS HAVE NOT BEEN SATISFACTORILY COMPLETED BY THE DEVELOPER WITHIN THE REQUIRED TIME.

CONTINUED ON NEXT PAGE



International Division 20 Cabot Road Medford, MA 02155 USA 888 868-0212 tel SWIFT CTZIUS33 TELEX 211047 CTZINTL

IRREVOCABLE STANDBY LETTER OF CREDIT NUMBER S904105

ISSUING BANK: CHARTER ONE BANK, N.A. INTERNATIONAL DEPARTMENT 20 CABOT ROAD, M/S MMF470 MEDFORD, MA 02155 U.S.A.

PLACE AND DATE OF ISSUE: MEDFORD, MA DECEMBER 21, 2006 PLACE AND DATE OF EXPIRY: AT OUR COUNTERS DECEMBER 22, 2007

BENEFICIARY: CITY OF AURORA 44 E. DOWNER PLACE AURORA, IL 60507 ATTN: MR. JOHN SPOELMA TEL: 630-906-7432

APPLICANT:

GEMINI OFFICE DEVELOPMENT LLC ONE SOUTH WACKER DRIVE SUITE 800 CHICAGO, IL 60606

UP TO AN AGGREGATE AMOUNT THEREOF: USD 26,290.60

PARTIAL DRAWINGS: PERMITTED

CREDIT AVAILABLE WITH: CHARTER ONE BANK, N.A. INTERNATIONAL DEPARTMENT 20 CABOT ROAD, M/S MMF470 MEDFORD, MA 02155 U.S.A.

AGAINST PRESENTATION OF DOCUMENTS AS DETAILED HEREIN.

DRAFTS: AT SIGHT

DRAWN ON: CHARTER ONE BANK, N.A.

RE: GEMINI OFFICE DEVELOPMENT LLC

THE UNDERSIGNED, CHARTER ONE BANK, N.A. HEREBY ISSUES THIS IRREVOCABLE STANDBY LETTER OF CREDIT NO. S904105 IN FAVOR OF THE CITY OF AURORA IN THE AMOUNT OF TWENTY SIX THOUSAND TWO HUNDRED NINETY AND 60/100 U.S. DOLLARS (USD26,290.60) EFFECTIVE

CONTINUED ON NEXT PAGE



X Charter One

International Division 20 Cabot Road Medford, MA 02155 USA 888 868-0212 tel SWIFT CTZIUS33 TELEX 211047 CTZINTL

OUR REFERENCE NUMBER S904105

PAGE

IMMEDIATELY AND EXPIRING AT OUR OFFICE ON DECEMBER 22, 2007.

THIS IRREVOCABLE STANDBY LETTER OF CREDIT IS ISSUED FOR THE PURPOSE OF SECURING AND PAYING FOR THE INSTALLATION OF THE PUBLIC IMPROVEMENTS AND STORMWATER MANAGEMENT FACILITIES IN THE GEMINI OFFICE DEVELOPMENT LLC SUBDIVISION, ONE SOUTH WACKER DRIVE CONSTRUCTED BY MORRIS ENGINEERING, INC. IN ACCORDANCE WITH PLANS AND SPECIFICATIONS APPROVED BY THE CITY OF AURORA ENGINEER AS PREPARED BY MORRIS ENGINEERING, INC.

IN NO EVENT SHALL THIS IRREVOCABLE STANDBY LETTER OF CREDIT OR THE OBLIGATIONS CONTAINED HEREIN EXPIRE EXCEPT UPON SAID PRIOR WRITTEN NOTICE TO THE CITY CLERK OF THE CITY OF AURORA, 44 EAST DOWNER PLACE, AURORA, ILLINOIS 60507 BY CERTIFIED OR REGISTERED MAIL, RETURN RECEIPT REQUESTED, AT LEAST NINETY (90) DAYS PRIOR TO SAID EXPIRATION DATE, THAT SAID LETTER OF CREDIT IS ABOUT TO EXPIRE AND THAT THE SAID EXPIRATION DATE SHALL BE EXTENDED AS REQUIRED TO COMPLY WITH THIS NOTICE PROVISION.

ON APPROVAL OF THE CITY ENGINEER THIS IRREVOCABLE STANDBY LETTER OF CREDIT MAY BE RENEWED OR EXTENDED PRIOR TO THE SAID EXPIRATION DATE BY SUBMITTING A NEW LETTER OF CREDIT IN THE SAME FORM AS THIS LETTER OF CREDIT TO THE CITY ENGINEERING DEPARTMENT IN AN AMOUNT AS DETERMINED BY THE CITY ENGINEER TO COMPLETE AND PAY FOR THE ABOVE DESCRIBED PUBLIC IMPROVEMENTS AND STORM WATER MANAGEMENT FACILITIES.

WE HEREBY ENGAGE WITH YOU THAT ALL DEMANDS FOR PAYMENT MADE IN CONFORMITY WITH THE TERMS OF THIS IRREVOCABLE STANDBY LETTER OF CREDIT WILL BY DULY HONORED ON PRESENTATION TO US PRIOR TO EXPIRATION OF THIS LETTER OF CREDIT, A LETTER FROM CITY ENGINEER OF THE CITY OF AURORA DEMANDING PAYMENT ON OR BEFORE SAID EXPIRATION DATE CERTIFYING THAT:

1. SAID LETTER OF CREDIT WILL EXPIRE WITHIN THIRTY (30) DAYS AND HAS NOT BEEN RENEWED OR EXTENDING AND A REPLACEMENT LOC HAS NOT BEEN ISSUED;

OR

2. THAT THE AFORESAID IMPROVEMENTS HAVE NOT BEEN SATISFACTORILY COMPLETED BY THE DEVELOPER WITHIN THE REQUIRED TIME.

CONTINUED ON NEXT PAGE



International Division 20 Cabot Road Medford, MA 02155 USA 888 868-0212 tel SWIFT CTZIUS33 TELEX 211047 CTZINTL

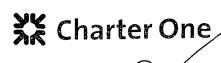
OUR REFERENCE NUMBER S904105

PAGE

THIS CREDIT IS SUBJECT TO THE UNIFORM CUSTOMS AND PRACTICES FOR DOCUMENTARY CREDITS, INTERNATIONAL CHAMBER OF COMMERCE PUBLICATION # 500.

PLEASE ADDRESS ANY INQUIRIES OR CORRESPONDENCE TO ATTN: MICHAEL DOUGAN, INTERNATIONAL DEPT., QUOTING OUR REFERENCE NO: S904105

BY PHONE: (781) 655-4877, BY FAX: (781) 391-8701 BY SWIFT: CTZIUS33, BY TELEX: 211047 CTZINTL



COPY



International Division 20 Cabot Road Medford, MA 02155 USA 888 868-0212 tel SWIFT CTZIUS33 TELEX 211047 CTZINTL

AMENDMENT TO IRREVOCABLE STANDBY LETTER OF CREDIT

ISSUING BANK: CHARTER ONE BANK, N.A. INTERNATIONAL DEPARTMENT 20 CABOT ROAD, M/S MMF470 MEDFORD, MA 02155 U.S.A. L/C NUMBER: S904105 AMENDMENT NO. 001

DATE OF ISSUE: DECEMBER 21, 2006 DATE OF THIS AMENDMENT: JANUARY 04, 2007

BENEFICIARY:
CITY OF AURORA
44 E. DOWNER PLACE
AURORA, IL 60507
ATTN: MR. JOHN SPOELMA
TEL: 630-906-7432

APPLICANT:

GEMINI OFFICE DEVELOPMENT LLC ONE SOUTH WACKER DRIVE SUITE 800 CHICAGO, IL 60606

LADIES AND GENTLEMEN:

WE HEREBY AMEND OUR LETTER OF CREDIT AS FOLLOWS:

IN THE FIRST PARAGRAPH ON PAGE 2, DELETE THE WORDING FROM QUOTE GEMINI OFFICE DEVELOPMENT LLC SUBDIVISION, ONE SOUTH WACKER DRIVE CONSTRUCTED BY MORRIS ENGINEERING, INC. UNQUOTE AND REPLACE WITH QUOTE GEMINI OUTPATIENT FACILITY, 240 N.OAKHURST DRIVE, AURORA, IL CONSTRUCTED BY GEMINI OFFICE DEVELPOMENT, LLC UNQUOTE.

PLEASE INDICATE YOUR ACCEPTANCE/REJECTION OF THIS AMENDMENT BY SIGNING THE APPROPRIATE LINE ON THE COPY OF THIS AMENDMENT AND RETURNING THE SIGNED COPY TO US AT THE ADDRESS, AS LISTED ABOVE.

WE ACCEPT ALL OF THE ABOVE
LISTED AMENDED TERMS.
WE REJECT THE ABOVE LISTED
AMENDED TERMS.

CONTINUED ON NEXT PAGE

አ Charter One

COPY

International Division 20 Cabot Road Medford, MA 02155 USA 888 868-0212 tel SWIFT CTZIUS33 TELEX 211047 CTZINTL

OUR REFERENCE NUMBER S904105

PAGE 2

AUTHORIZED SIGNATURE

THIS AMENDMENT IS TO BE CONSIDERED AS PART OF THE ABOVE MENTIONED CREDIT, AND MUST BE ATTACHED THERETO.

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.

PLEASE ADDRESS ANY INQUIRIES OR CORRESPONDENCE TO ATTN: MICHAEL DOUGAN, INTERNATIONAL DEPT., QUOTING OUR REFERENCE NO: S904105 BY PHONE: (781) 655-4877, BY FAX: (781) 391-8701 BY SWIFT: CTZIUS33, BY TELEX: 211047 CTZINTL

AUTHORIZED SIGNATURE

AUTHORIZED SIGNATURE



Kenneth Schroth, P.E Director of Public Works/ City Engineer

City of Aurora

DPW Engineering Division

44 E. Downer Place • Aurora, Illinois 60507-2067 • Phone (630) 844-3620 FAX (630) 892-0322 TDD (630) 892-8858

FAX COVER SHEET

DATE:	12/26/06	TIME	: 7:15 AM
TOTAL NUMBER	OF PAGES INCLUDING COVE	R SHEET	2
ATTENTION:	Michael F. Dougan	CC:	Jonas Vaznelis
NAME OF FIRM:	Charter One		Morris Engineering
FAX NUMBER:	791-391-8701		630-271-0774
PAK HOMBEN		CC:	Thomas Lehman
			Partners in Development
			630-963-4475
FROM:	John H. Spoelma	RE:	Project # 06.390 Gemini Outpatient Facility 240 N. Oakhurst Aurora, IL

COMMENTS:

Attached is a mark-up of required revisions to page 2 of the letter of credit submitted for the above listed project.

Charter One

Michael F. Dougan Trade Specialist III International Trade Operations

20 Cabot Road, 4th Floor Mail Code MMF470 Medford, MA 02155-5141 781 655.4877 tel 791 391.8701 fax

MICHAEL.DOUGAN@CFGCUSTOMERS.COM

XX RBS

GEOTECHNICAL ENGINEERING SERVICES REPORT

Proposed Medical Office Building Oakhurst Drive – Lot 2 Aurora, Illinois

> PSI File No. 042-55077 December 19, 2005



December 19, 2005

Mr. Thomas W. Lehman, PE Managing Principal Partners in Development, USA, LLC 6301 S. Cass Avenue, Suite 301 Westmont, Illinois 60559

(630) 963-8184 (630) 963-4475 fax

Re:

Preliminary Geotechnical Engineering Services Report

Proposed Office Development

"Lot 2" - Oakhurst Drive

Aurora, Illinois PSI Project No. 042-55077

Dear Mr. Lehman,

Professional Service Industries, Inc. (PSI) is pleased to submit our Preliminary Geotechnical Engineering Services Report for the proposed office development in Aurora, Illinois. preliminary report includes the results of field and laboratory testing, preliminary recommendations for foundation, as well as preliminary recommendations for general site development.

PSI appreciates the opportunity to perform this Preliminary Geotechnical Evaluation and we look forward to continued participation during the design and construction phases of this project. If you have questions pertaining to this preliminary report, or if PSI may be of further service, please contact our office at (847) 931-7110.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Scott Brown, El Project Engineer

IL License No. 062-049089

Expires 1 1/30/07

SDB/jjb/ En

John \ Balun

Branch Manager

PRELIMINARY GEOTECHNICAL ENGINEERING SERVICES REPORT

PROPOSED OFFICE DEVELOPMENT LOT 2 OAKHURST DRIVE OAKHURST DRIVE JUST SOUTH OF E. NEW YORK STREET AURORA, ILLINOIS

PSI PROJECT NO. 042-55077

PREPARED FOR

PARNTERS IN DEVELOPMENT, USA. LLC 6301 S. CLASS AVENUE, SUITE 301 WESTMONT, ILLINOIS

DECEMBER 19, 2005

BY

PROFESSIONAL SERVICE INDUSTRIES, INC.

TABLE OF CONTENTS

PROJECT INFORMATION	•••••
PROJECT AUTHORIZATION	
EVALUATION AND RECOMMENDATIONS	•••••
PRELIMINARY GEOTECHNICAL CONSIDERATIONS	
RECOMMENDATIONS FOR THE FINAL GEOTECHNICAL INVESTIGATION	
PRELIMINARY CONSTRUCTION PLANNING CONSIDERATIONS	1
PRELIMINARY DRAINAGE AND GROUNDWATER CONSIDERATIONS	10
GEOTECHNICAL RISK	1
REPORT LIMITATIONS	
APPENDIX	12

BORING LOCATION DIAGRAM
SITE VICINITY MAP
GENERAL NOTES
USCS SOIL CLASSIFICATION CHART
BORING LOGS
OVEREXCAVATION AND BACKFILL PROCEDURE

PROJECT INFORMATION

Project Authorization

Professional Service Industries, Inc. (PSI) has completed a preliminary geotechnical exploration for the proposed office development on Oakhurst Drive in Aurora, Illinois. Mr. Thomas W. Lehman with Partners in Development, USA, LLC authorized PSI's services by signing PSI Proposal No. 042-550126 faxed to PSI on December 5, 2005.

Project Description

PSI understands that Gemini Office Development, LLC is considering purchase of a parcel of land designated as "Lot 2" in Aurora, Illinois for the purpose of constructing a medical office building without a basement. This report is based on the building being a single-story, slab-on-grade structure, approximately 22,000 square feet in plan area. The building will be constructed toward the center portion of the site.

Mr. Thomas Lehman of Partners in Development USA, LLC provided PSI with project information through an email on November 28, 2005. PSI has received an untitled drawing showing a survey of Lot 2. The drawing is copyrighted 2005 Cemcon, Ltd.

Structural loads were not provided to PSI; however, this report is based on individual column and bearing wall loads not exceeding 75 kips and 3 kips per linear foot, respectively. This report is also based on floor slab live loads not exceeding 150 psf.

The geotechnical recommendations presented in this report are based on the available project information, building location, and the subsurface materials described in this report. If any of the noted information is incorrect, please inform PSI in writing so that we may amend the recommendations presented in this report (if appropriate, and if desired by the client). PSI will not be responsible for the implementation of its recommendations when it is not notified of changes in the project.

Purpose/Scope of Services

The purpose of this preliminary study was to explore the subsurface conditions at the site in order to prepare preliminary recommendations for shallow foundation for the proposed office development. PSI's scope of services included drilling a total of six (6) soil borings to a depth of approximately 20 feet below the existing ground surface.

Representative soil samples obtained during the field exploration program were transported to the laboratory for classification testing. This preliminary report briefly outlines the following:

- Available project information
- Site topographic information and surface conditions
- Review of subsurface conditions
- Review of field and laboratory test procedures and test data
- Generalized earthwork considerations, including suitability for re-use of excavated material as fill, and preliminary recommendations for subgrade preparation and site grading
- Preliminary suitability of the site for:
 - Shallow foundations, including a range of allowable bearing pressure(s), and a range of estimated settlement
 - Slab-on-grade floors
- Generalized discussion of construction considerations, including temporary excavation and construction control of water
- Recommendations for the final Geotechnical Investigation and final Geotechnical Report

The scope of services did not include an environmental assessment to determine the presence or absence of wetlands, or hazardous or toxic materials in the soil, bedrock, surface water, groundwater or air, on, or below or around this site. Any statements in this report and/or on the boring logs regarding odors, colors, and/or unusual or suspicious items or conditions are strictly for informational purposes.

PSI's scope of services did not include any service to investigate or detect the presence of moisture, mold or other biological contaminates in or around any structure, or any service that was designed or intended to prevent or lower the risk of the occurrence of the amplification of the same. Mold is ubiquitous to the environment with mold amplification occurring when building materials are impacted by moisture. Site conditions are outside of PSI's control, and mold amplification will likely occur, or continue to occur, in the presence of moisture. As such, PSI cannot and shall not be held responsible for the occurrence or recurrence of mold amplification.

SITE AND SUBSURFACE CONDITIONS

Site Location and Description

The site is located on the west side of Oakhurst Drive just south of New York Street in Aurora, Illinois and is currently a vacant lot with some vegetation. A detention pond is located directly to the west of the site. The site was generally level with a visually estimated difference in elevation of approximately 2 to 3 feet. The site has an approximate latitude and longitude of 41N 45' 27" and 88W 14' 21", respectively.

Subsurface Conditions

Partners in Development, USA, LLC selected the number of borings and boring depths. PSI located the borings in the field by measuring distances from known fixed site features. The borings were advanced utilizing 2 1/4" inside-diameter, hollow stem auger drilling methods and

> Professional Service Industries, Inc. No. 042-55077 001048

soil samples were routinely obtained during the drilling process. Select soil samples were tested in the laboratory to determine material properties for our evaluation. Drilling, sampling, and laboratory tests were accomplished in general accordance with ASTM procedures.

Subsurface conditions generally consisted of approximately 6 to 12 inches of clayey topsoil followed by undocumented silty clay fill materials to approximately 3 to 7 ½ feet below the existing grade. The fill materials were generally underlain by medium stiff to very stiff silty clay with trace sand and gravel to the borings' termination depth of approximately 20 feet below existing grade. The fill materials were likely placed during site grading for the adjacent retail development. Field and laboratory test results are summarized in the following table:

SOIL TYPE	DEPTH RANGE (FEET)	SPT N-VALUES (BLOWS PER FOOT)	Moisture Content (%)	Q _P (TSF)
Fill	1/2 - 7 1/2	6 – 26	14 – 19	N/A
Silty Clay	3-20	11 – 29	16 – 18	1.5 – 4.5
Silly Clay	5 20	<u> </u>	<u></u>	·

The native soils were visually classified as silty clay (CL) according to the Unified Soil Classification System (USCS).

The subsurface description is of a generalized nature to highlight the major subsurface stratification features and material characteristics. The boring logs included in the appendix should be reviewed for specific information at individual boring locations. These records include soil descriptions, stratifications, penetration resistances, locations of the samples and laboratory test data as well as water level information. The stratifications shown on the boring logs represent the conditions only at the actual boring locations. Variations may occur, and should be expected between boring locations. The stratifications represent the approximate boundary between subsurface materials and the actual transition between layers may be gradual. The samples, which were not altered by laboratory testing, will be retained for 60 days from the date of this report and then will be discarded.

Groundwater Conditions

Groundwater was observed to collect in boring B-4 at an approximate depth of 19 ½ feet below existing grade. However, fluctuations in the groundwater level should be anticipated throughout the year depending on variations in climatological conditions and other factors not apparent at the time the borings were performed. Additionally, discontinuous zones of perched water may exist within the soils. The possibility of groundwater level fluctuation should be considered when developing the design and construction plans for the project. Prior to construction, we recommend that the Contractor determine the actual groundwater levels at the site to determine if groundwater could have an adverse effect on proposed construction activities.

EVALUATION AND RECOMMENDATIONS

Preliminary Geotechnical Considerations

The following preliminary geotechnical-related recommendations have been developed on the basis of the subsurface conditions encountered at the time of drilling and PSI's understanding of the proposed development. Should changes in the project criteria occur, a review must be made by PSI to determine if modifications to our recommendations will be required.

The main preliminary geotechnical factor that may affect construction at this site is the presence of undocumented fill observed in the borings to depths ranging from about ½ to 7 ½ feet below existing grade. Where existing fill is encountered, PSI typically recommends that building foundations be planned to extend through the fill materials and be supported on the medium stiff to very stiff native silty clay soils. Based on the boring information, it is anticipated that these existing undocumented clayey fill soils should be suitable for support of floor slabs in the areas of B-1, B-2, B-4, and B-6. However, undocumented fill materials should be carefully evaluated by proof-rolling and density testing at the time of construction to document the inplace consistency of these materials to support the proposed floor slabs and pavements. The wood fragments found in the undocumented fill materials located in the area of B-3 and B-5 could cause additional settlement over time that can not be accounted for by proof rolling and are considered unsuitable to support floor slabs

Deleterious materials, such as wood were encountered within the undocumented fill materials during the drilling operations in borings B-3 and B-5. Deleterious materials could include, but are not limited to, bricks, asphalt, concrete, metal, wood, or other building debris. Although deleterious materials were not encountered in the remaining borings, this does not eliminate the possibility that deleterious materials could be present within the undocumented fill materials at other locations on the site.

The primary risk of supporting buildings on undocumented/uncontrolled fill materials is the potential for excessive and/or non-uniform settlement. The non-uniformity concern is based on the lack of information regarding how the fill was originally placed. Without documentation, PSI cannot make an assessment as to whether or not the fill materials between the boring are consistent with what was explored. Risk of fill settlement can be reduced if the existing fill is removed and replaced with a controlled and compacted structural fill, or if records documenting the placement and compaction of the fill can be located. Although soft or loose fill materials were not encountered in the borings, this does not eliminate the possibility that soft or loose pockets or layers are present between and/or beyond the borings.

PSI has presented the geotechnical considerations with the understanding that the owner is willing to accept an elevated risk of floor slab settlement and utilize the existing fill as the support of slab on grade. PSI recommends a typical approach to site development and construction and provides a minimum level of fill mitigation. This includes typical observations proofrolling/proof-compacting of the floor slab and pavement areas, foundation excavation, and reworking of the unsuitable fill materials.

Preliminary Site Preparation & Fill Requirements

If site grading takes places prior to a final geotechnical report being reissued, PSI recommends that organic topsoil, frozen soil, vegetation, wood or other unsuitable material in the construction area be planned to be stripped from the site. Stripping operations should extend a minimum of 10 feet beyond the proposed building limits. PSI recommends that stripping operations be monitored and documented by a representative of the geotechnical engineer at the time of construction.

It should be planned that after stripping and excavating to the proposed subgrade level, as required, the building area should be proof-rolled with a loaded, tandem-axle dump truck or similar rubber-tired vehicle, loaded with at least 9 tons per axle. Proof-rolling aids in providing a firm base for compaction of fills, and helps to delineate soft, loose, or disturbed areas that may exist below subgrade level. Proof-rolling is especially important to help evaluate the surficial stability of existing fill soils that may be left in place below floor slabs. Soils which are observed to rut or deflect excessively (more than 1 inch) under the moving load should either be scarified and re-compacted with a sheepsfoot roller for cohesive soils, or undercut and replaced with properly compacted and documented structural fill. The proof-rolling and undercutting activities should be planned to be observed and documented by a representative of the geotechnical engineer and should be performed during a period of dry weather. In addition to proof-rolling, the subgrade soils should be scarified, moisture amended to be within 2% of the optimum moisture content, and compacted to at least 95 percent of the standard Proctor maximum dry density ASTM D 698 for a depth of at least 8 inches below the surface.

The undocumented fill soils encountered near the ground surface in the borings generally exhibited moderate blow counts and low to moderate moisture contents. Therefore, it appears these soils should be relatively stable during construction. However, clay subgrade soils can be easily disturbed by construction activities and are sensitive to moisture. Therefore, extra care should be used to avoid disturbing these soils during construction activities. If the soils become unstable during construction, or if near surface soft subgrade soils are encountered, it is recommended that coarse aggregate be placed on the subgrade until a stable base for compaction of fill is achieved. Typically, 12 to 24 inches of coarse aggregate are required, depending on the consistency of the subgrade. The coarse aggregate should consist of clean, crushed stone or gravel between ¼ and 3 inches in size. The coarse aggregate should be spread in a maximum of 12-inch layers and consolidated with compaction equipment until it is "locked" in place.

Once the subgrade has been adequately stabilized, placement of new structural fill that is required to establish construction grades may begin. The first layer of fill material should be placed in a relatively uniform horizontal lift and adequately keyed into the subgrade soils. It should be planned that fill materials should have a Standard Proctor maximum dry density greater than 100 pcf, be free of organic or other deleterious materials, have a maximum particle size of 3 inches, and have a liquid limit less than 45 and plasticity index less than 25. Soils classified as CL, ML, SM, SC-SM, SW, and SP will generally be suitable for use as structural fill. Soils classified as OL, OH, MH, CH and PT should be considered unsuitable.

It should be planned that the fill placed be tested and documented by a geotechnical technician and directed by a geotechnical engineer to evaluate the placement of fill material. It should be noted that the geotechnical engineer of record can only certify the testing that is performed and the work observed by that engineer or staff in direct report to that engineer.

Structural fill should be planned to be placed in maximum lifts of 8 inches of loose material and should include areas within the building as well as areas to a distance of at least 5 feet outside the building perimeters. The degree of compaction can be reduced to 95 percent in parking area(s) and above the footing base elevation in the building area. Each lift of compacted, engineered fill should be tested and documented by a representative of the geotechnical engineer prior to placement of subsequent lifts. If a fine-grained silt or clay soil is used for fill, close moisture content control will be essential to achieve the recommended degree of compaction. If water must be added, it should be uniformly applied and thoroughly mixed into the soil by disking or scarifying.

If fill is placed prior to completing a final geotechnical report, PSI recommends that newlyplaced, structural fill shall be evaluated in accordance with the following table:

Material Tested	PROCTOR TYPE	Min % DRY DENSITY	PLACEMENT MOISTURE CONTENT RANGE	FREQUENCY OF TESTING*-2
Structural Fill (Cohesive)	Standard	98%	-2 to +2 %	1 per 2,500 yd ² of fill placed
Structural Fill (Granular)	Standard	98%	-2 to +2 %	1 per 2,500 yd ² of fill placed
Optional Structural Fill (Cohesionless)	Relative Density *-1	75%	> 95% Saturation	1 per 2,500 yd ² of fill placed
Random Fill (non load bearing)	Standard	95%	-3 to +3 %	1 per 5,000 yd ² of fill placed
Utility Trench Backfill	Standard	95%	-2 to +2 %	1 per 50 LF of fill placed

^{*-1}Relative Density as determined in general accordance with ASTM D4253 and D4254

The test frequency for the laboratory reference shall be one laboratory Proctor or Relative Density test for every 5 field density tests for the first 25 field tests and for every 10 field density tests thereafter for each material used on the site. If the borrow or source of fill material changes, a new reference moisture/density test should be performed.

After the first 5 reference moisture/density tests have been performed for the same material, a 1-point proctor test can be used at an interval of one for every 10 field density tests to extend the full reference test cycle to one for every 25 field density tests. One-point proctor tests must be

^{*-2}A minimum of one test per lift or as follows

	-

compacted within -2 and 0 % dry of the calculated optimum moisture content as based on the family of optimum determined from the first 5 reference moisture density tests.

Tested fill materials that do not achieve either the required dry density or moisture content range shall be recorded, the location noted, and reported to the Contractor and Owner. A re-test of that area should be performed after the Contractor performs remedial measures. The above test frequencies should be discussed with the contractor prior to starting the work. Changes in the frequency and testing can be allowed based upon actual site conditions and review by the geotechnical engineer of record. Changes should be documented prior to their implementation.

Preliminary Foundation Recommendations

The proposed structure can be preliminarily supported on shallow, spread footing foundations. As discussed previously, PSI recommends that foundations extend through the fill materials and be supported on the medium stiff to very stiff native silty clay soils, or compacted structural fill. Column and strip footings bearing on these soils can be preliminarily designed for a maximum net allowable soil bearing pressures ranging from of 3,500 to 4,000 psf and 3,000 to 3,500 psf, respectively based on dead load plus design live load. The net pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation.

Exterior footings should be planned to be located at a depth of at least 3 ½ feet below the outside final exterior grades to provide adequate frost protection. If the building is constructed during winter months or if the footings will likely be subjected to freezing temperatures after construction is completed, then all footings should be protected from freezing. Interior footings should be founded at least 2 feet below the final floor slab level for proper confinement of the bearing soils.

PSI recommends that the planning and budgeting for this project include soils at footing design elevation being observed, tested, and documented by a representative of PSI prior to concrete placement to evaluate the suitability and uniformity of the bearing soils for support of the design foundation loads. The remedial procedures described in the following paragraph can be used to ascertain the typical methodologies required to provide suitable foundation support where unsuitable material such as soft or loose soils, existing fill, or organic soils are encountered.

For planning purposes, if unsuitable bearing soils are encountered in a footing excavation, the footing will need to be deepened to competent bearing soil and the footing could be lowered, or an overexcavation and backfill procedure could be performed. If an overexcavation and backfill procedure is utilized, it would require widening the deepened excavation in all directions at least 8 inches beyond the edges of the footing for each 12 inches of overexcavation depth (See "Overexcavation and Backfill Procedure" diagram in the Appendix). The overexcavation should then be backfilled in a maximum of 8-inches thick loose lifts with suitable granular fill material, such as IDOT Gradation CA-7 or CA-6, compacted to at least 98 percent of the maximum Standard Proctor dry density (ASTM D 698). Another alternative is to undercut and refill the unsuitable area with flowable mortar up to the design elevation of the footings. The flowable

mortar would serve as a protection to the subgrade during construction of the foundations.

Based on the known subsurface conditions, limited preliminary laboratory testing, and past experience, PSI anticipates that properly designed and constructed footings supported on the recommended, inspected and approved natural soils, or properly compacted structural fill should experience maximum total and differential settlements between adjacent columns of less than 1 inch and ¾ inches, respectively for the loadings described in this report. If loading changes, there will be a need to re-assess the settlements.

Preliminary Floor Slab Recommendations

From the results of PSI's exploration program, the floor slab can be planned to be grade supported on existing fill soils that have been proofrolled and documented by the geotechnical engineer, or inspected and approved newly placed, properly compacted structural fill which extends to natural soils as described herein. As stated above the undocumented fill materials in the areas of borings B-3 and B-5 contained wood fragments and are not suitable to support floor slabs. Floor slab subgrade preparation should be in accordance with the recommendations outlined in the Site Preparation & Fill Requirements section of this report.

For the subgrade, prepared as recommended, and properly compacted fill, a modulus of subgrade reaction, k value, of 140 pounds per cubic inch (pci) may be used in the grade slab design based on a 1 ft. x 1 ft. plate load test. However, depending on how the slab load is applied, the value will have to be geometrically modified. The value should be adjusted for larger areas using the following expression for cohesive and cohesionless soil:

Modulus of Subgrade Reaction, $k_s=(\frac{k}{B})$ for cohesive soil and $k_s=k(\frac{B+1}{2B})^2$ for cohesionless soil

where: k_s = coefficient of vertical subgrade reaction for loaded area,

k = coefficient of vertical subgrade reaction for 1x1 square foot area, and

B = width of area loaded, in feet

The precautions listed below should be followed for construction of slab-on-grade pads. These details will not reduce the amount of movement, but are intended to reduce potential damage should some settlement of the supporting subgrade take place. Some increase in moisture content is inevitable as a result of development and associated landscaping. However, extreme moisture content increases can be largely controlled by proper and responsible site drainage, building maintenance and irrigation practices.

Cracking of slab-on-grade concrete is normal and should be expected. Cracking can occur
not only as a result of heaving or compression of the supporting soil and/or bedrock material,
but also as a result of concrete curing stresses. The occurrence of concrete shrinkage crack,
and problems associated with concrete curing may be reduced and/or controlled by limiting

the slump of the concrete, proper concrete placement, finishing, and curing, and by the placement of crack control joints at frequent intervals, particularly where re-entrant slab corners occur. The American Concrete Institute (ACI) recommends a maximum panel size (in feet) equal to approximately three times the thickness of the slab (in inches) in both directions. For example, joints are recommended at a maximum spacing of twelve (12) feet based on having a four-inch slab. PSI also recommends that the slab be independent of the foundation walls. Using fiber reinforcement in the concrete can also control shrinkage cracking.

 Areas supporting slabs should be properly moisture conditioned and compacted. Backfill in all interior and exterior water and sewer line trenches should be carefully compacted to reduce the shear stress in the concrete extending over these areas.

Exterior slabs should be isolated from the building. These slabs should be reinforced to function as independent units. Movement of these slabs should not be transmitted to the building foundation or superstructure.

PSI recommends that a minimum 4-inch thick, free-draining granular mat be placed beneath the floor slab to enhance drainage. The floor slabs should have an adequate number of joints to reduce cracking resulting from differential movement and shrinkage. Floor slabs should not be rigidly connected to columns, walls, or foundations.

A vapor retarder should be considered in areas of tile, carpet, or other moisture sensitive floor finishes. Appropriate curing procedures should be followed to reduce the risk of slab "curling" if a vapor retarder is used.

RECOMMENDATIONS FOR THE FINAL GEOTECHNICAL INVESTIGATION

Based on the preliminary geotechnical investigation of this site, it is PSI's opinion that the following information should be supplied by the designer to prepare a more comprehensive final geotechnical investigation of the proposed site and should be prepared prior to being constructed.

- Detailed location of the structures
- Grading plan with floor slab elevations
- Structural loads on the walls and columns
- Locations of critical structures such as elevator pits, sumps, stairwells, basements, loading docks, etc.
- Documentation of known structural fill placed on the site (if fill is placed before the final geotechnical report is prepared)

Based on the information obtained from PSI's preliminary investigation, it is our opinion that the final geotechnical investigation should include:

Additional borings should be performed in the building and parking areas to depths consistent
with the preliminary geotechnical investigation. The final geotechnical report should be based
on at least four (4) borings being within the proposed building foot print

PRELIMINARY CONSTRUCTION PLANNING CONSIDERATIONS

It is recommended that PSI be retained to provide observation and testing of construction activities involved in the foundation, earthwork, and related activities of this project. PSI cannot accept any responsibility for any conditions that deviate from those described in this report. Nor can PSI accept responsibility for the performance of the foundation if not also engaged to provide construction observation and testing for this project.

Preliminary Drainage and Groundwater Considerations

Water should not be allowed to collect in the foundation excavations, on floor slab areas, or on prepared subgrades of the construction area during or after construction. Undercut or excavated areas should be sloped toward one corner to facilitate removal of any collected rainwater, groundwater or surface runoff. Positive site drainage should be provided to reduce infiltration of surface water around the perimeter of the buildings and beneath the floor slabs. Grades should be sloped away from the buildings and surface drainage should be collected and discharged such that water is not permitted to infiltrate the backfill and floor slab areas.

Groundwater was observed to collect in boring B-4 during the drilling operations at an approximate depth of 19 ½ feet below existing grade. It is possible that seasonal variations may cause water level fluctuations or the presence of a water table in the upper soils at the time of construction. Where water is encountered at shallow depths, pumping from sumps or the use of perimeter trenches to collect and discharge the water away from the work area should be used. Should excessive and uncontrolled amounts of seepage occur, the geotechnical engineer should be consulted.

Federal Excavation Regulations

In Federal Register, Volume 54, No. 209 (October 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, part 1926, Subpart P". This document was issued to better insure the safety of workmen entering trenches or excavations. This federal regulation mandates that all excavations, whether they be utility trenches, basement excavation or footing excavations, be constructed in accordance with the new OSHA guidelines. It is our understanding that these regulations are being strictly enforced and if they are not closely followed, the owner and the contractor could be liable for substantial penalties.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractor's "responsible person," as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety

regulations. PSI is providing this information solely as a service to our client. PSI is not assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

GEOTECHNICAL RISK

The concept of risk is an important aspect of the geotechnical evaluation. The primary reason for this is that the analytical methods used to develop geotechnical recommendations do not comprise an exact science. The analytical tools that geotechnical engineers use are generally empirical and must be used in conjunction with engineering judgment and experience. Therefore, the solutions and recommendations presented in the geotechnical evaluation should not be considered risk-free, and more importantly, are not a guarantee that the interaction between the soils and the proposed structure will perform as planned. The engineering recommendations, presented in the preceding section, constitute PSI's professional estimate of the necessary measures for the proposed structure to perform according to the proposed design based on the information generated and reference during this evaluation, and PSI's experience in working with these conditions.

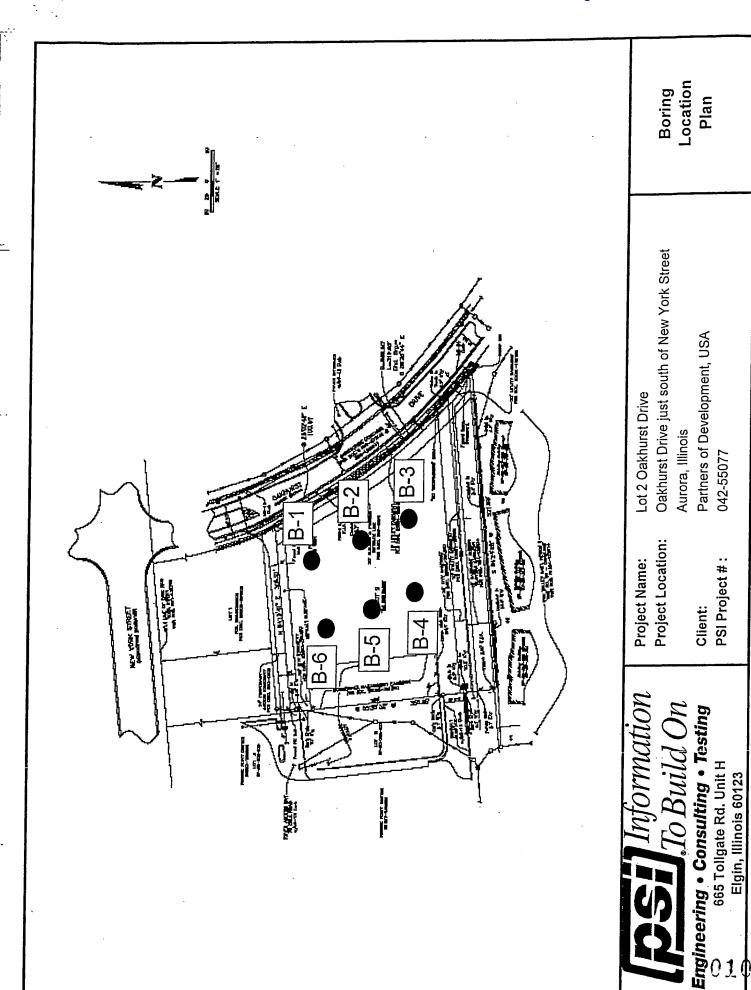
REPORT LIMITATIONS

The recommendations submitted are based on the available subsurface information obtained by PSI and design details furnished by Partners in Development, USA, LLC for the proposed project. If there are any revisions to the plans for this project or if deviations from the subsurface conditions noted in this report are encountered during construction, PSI should be notified immediately to determine if changes in the foundation recommendations are required. If PSI is not retained to perform these functions, PSI will not be responsible for the impact of those conditions on the project.

The geotechnical engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are implied or expressed.

After the plans and specifications are more complete, the geotechnical engineer should be retained and provided the opportunity to review the final design plans and specifications to check that our engineering recommendations have been properly incorporated into the design documents. At this time, it may be necessary to submit supplementary recommendations. This report has been prepared for the exclusive use of Partners in Development, USA, LL and their consultants for the specific application to the proposed Lot 2 Oakhurst property in Aurora, Illinois.

APPENDIX



Ф59

